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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/597,847

Filing Date: August 09, 2006

Appellant(s): KROPP ET AL.

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Oleg F. Kaplan  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed January 21, 2009 appealing from the Office action mailed September 29, 2008.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

|              |               |        |
|--------------|---------------|--------|
| 4,328,593    | SUTTER et al. | 5-1982 |
| 2003/0163202 | LAKIN         | 8-2003 |

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sutter et al. 4,332,036 in view of Lakin 2003/0163202.

Re claim 18, Sutter discloses the invention substantially as claimed including prosthesis 1 for replacing a surface in an area of a ball of a ball-and-socket joint comprising: spherical shell section 3 having outer surface 3a that is configured to lie in an articular fossa and attachment to a surface, shell section 3 having cavity 3c for receiving a bone end (fig.14) and crown 7 that partitions the cavity of the shell section into first and second cavities capable of receiving bone (fig.6) wherein the shell is hemispherically shaped (fig.1). However, Sutter does not specifically disclose that the shell section comprises less than a hemisphere and that a free edge of the crown lies in the same plane as a free edge of the shell section.

Lakin discloses a prosthesis for replacing a surface of a ball in a ball-and-socket joint, in the same field of endeavor, wherein the shell section may be in the form of a partial hemisphere (par.32) for the purpose of providing a partial hip replacement that

conserves healthy bone tissue for future revision procedures and minimizes the amount of tissue that is required to be removed (par.8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the hemispherical head of Sutter to be less than hemispherical as taught by Lakin in order to minimize the amount of bone tissue resection. Regarding the length of the crown, Sutter discloses the free edge of crown 7 extending for less than 40% of the length of the crown which means that this range may include the crown lying in the same plane as the free edge of the shell (col.5, ll.17-19). Further, it has been held that limitations relating to size are not sufficient to patentably distinguish over the prior art (In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955) MPEP 2144.04 IV A). It would also have been obvious to one of ordinary skill in the art at the time of the invention to modify the length of the crown to accommodate different patient anatomy. For instance, if a patient has a smaller femur, a shorter crown length would be more appropriate. Sutter also teaches that the length of the crown should be sufficiently short so as not to interfere with the main vein strand (col.6, ll.29-34). Finally, if the patient has a sufficient amount of healthy bone tissue, a shorter crown length will allow for less healthy bone to be resected which helps maintains the strength and integrity of the bone. In addition to the above reasoning, it is noted that the claim does not specifically define the edges of the crown and shell, nor the plane within which the edges lie. As such one may interpret any point on the edge of the crown and shell as the claimed free edge and define a plane running from each of these points resulting in each edge lying in the same plane as claimed.

Re claims 19-21 and 42, as Sutter in view of Lakin discloses the general conditions of the claims wherein the shell is less than a hemisphere, it would have been obvious to one of ordinary skill in the art to modify the size of the partial hemispherical shell to include the claimed ranges as it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955), MPEP 2144.05 II A). Also, Lakin teaches set of a plurality of shells of various diameters in order to allow a surgeon to pick from a variety of components to match the patient's anatomy (par.38).

Re claims 22-30, Sutter further teaches prosthesis 1 wherein first cavity 7 has a circular shape and second cavity 3c has an annular shape (fig.1), wherein innermost end of the crown 7b is integrally connected to the inner surface of the shell section so as to form a single integral structure (col.3, ll.25-27), wherein at least one of the inner surface of the shell section and a surface of the crown is configured for contact with the bone end and is therefore a roughened surface (col.5, ll.46-50), wherein the crown has at least five openings 7e formed therein to provide communication between the first and second cavities (figs.1, 20), wherein at least one of an inner surface and an outer surface of the crown has a relief structure comprising a fluting that is formed by ring beads that extend circumferentially around the crown a part thereof (col.7, ll.26-31, col.3, ll.53-60; col.6, ll.1-17; figs. 7, 11).

Re claim 31, Sutter further teaches prosthesis 1 wherein the crown and shell section are separate parts and are constructed to be securely coupled to one another (col.3, ll.25-27).

Re claims 32 and 35, Sutter teaches the invention as claimed and as discussed above. Sutter does not teach a prosthesis wherein the crown and shell section are constructed to be threadingly coupled to one another by means of threads formed on at least one of an outer surface of the crown and the inner surface of the shell section.

Lakin teaches a screw locking mechanism for the purpose of coupling two components together (par.34, ll.1-4). While the location of the threads is not positively disclosed as being on an outer surface of the crown and/or the inner surface of the shell section, it would have been a matter of design choice to place the threads in either location, which a person of ordinary skill in the art would have found obvious as they were not disclosed as being critical to the practice of the invention (In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) MPEP 2144.04 IV B). Further, it has been held that making parts separable for any desirable reason is an obvious extension of prior art teachings (In re Dulberg, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961) MPEP V C).

Therefore, it would have been obvious at the time of the invention to modify Sutter in view of Lakin in order to hold the components together without any appreciable movement as taught by Lakin, par.34, ll.4-6.

Re claims 33 and 34, Sutter further teaches prosthesis 1 wherein the crown has a circular shape (col.3, l.22) and is arrayed in a coaxial manner (col.3, ll.22-23; fig.1).

Re claims 36 and 40, Sutter teaches prosthesis 1 for replacing a surface in an area of a ball of a ball-and-socket joint comprising: spherical shell section 3 having outer surface 3a that is configured to lie in an articular fossa and attachment to a surface, shell section 3 having cavity 3c for receiving a bone end (fig.14), and crown 7 that partitions the cavity of the shell section into first and second cavities adapted to receive portions of the bone end (fig.1), wherein shell section 3 is hemispherical (col.3, ll.17-19) and a free edge of the crown is displaced (s) from a plane in which a free edge of shell section 3 lies (fig.3). Regarding the limitation wherein the shell section comprises less than a hemisphere, see the rejection of claim 18 above with respect to the teachings of Lakin for minimizing bone resection with smaller components. Regarding the limitation wherein the crown does not intersect a plane in which the free edge of the shell section lies, see the rejection of claim 18 above which discusses that Sutter teaches that the crown need not extend beyond the plane of the shell and that it would have been obvious to vary the length of the crown to minimize the amount of necessary bone resection to preserve the integrity of the bone. Further the free edge of the crown does not intersect or lie in the same plane as the free edge of the shell as shown in figs. 3, 10, and 11.

Re claim 41, Sutter further teaches a procedure for implantation of a prosthesis in a bone comprising the steps of: preparing the bone and forming a groove in the bone (col.5, ll.4-14; figs. 4, 5); providing prosthesis 1 for replacing a surface in an area of a ball of a ball-and-socket joint, prosthesis 1 including spherical shell section 3 and crown 7, shell section 3 having outer surface 3a that is configured to lie in an articular fossa

and attachment to a surface, shell section 3 having cavity 3c for receiving a bone end (fig.14); crown 7 partitioning the cavity of the shell section into a first cavity and a second cavity (fig.1), wherein a shape of shell section 3 is hemispherical (col.3, ll.17-19) and a free edge of crown 7 lies outside the plane of the free edge of shell section 3 (fig.1); and inserting the prosthesis onto the bone such that the crown is received in the groove formed in the bone (col.5, ll.14-17; fig.6). Regarding the limitations wherein the shell is less than a hemisphere and the crown lies in the same plane as a free edge of the shell, see the rejection of claim 18 above.

#### **(10) Response to Argument**

Appellant's arguments regarding the rejection of claims 18-42 over Sutter in view of Lakin have been fully considered but they are not persuasive. Appellant argues that Sutter fails to teach or suggest a prosthesis wherein a free edge of the crown lies in the same plane as a free edge of the shell section and states that Sutter does not teach or suggest that the portion s may be removed altogether to provide a coplanar arrangement. However, Sutter teaches that portion s of the crown is at most 40% of the length of the crown, and this range includes 0% which results in the claimed coplanar arrangement. By placing a limit on the length of portion s, this range also implies that the crown should be as short as possible depending on the health of the patient's bone. Appellant further argues that Sutter explicitly teaches that the sleeve must extend out of the cap by a minimum distance s which teaches away from the claimed coplanar arrangement, however, Sutter never explicitly states that the sleeve must extend out of the cap as Appellant states. In fact Sutter teaches that the crown should be sufficiently

short so as to not interfere with the main vein strand (col.6, ll.29-34; fig.6). It is therefore reasonable for one of ordinary skill in the art to modify the length of the crown in order to minimize the amount of required bone resection and to prevent damage to the main vein strand. It is well known in the art to decrease the amount of necessary bone resection by decreasing the size of the prosthetic components. The device of Sutter is specifically directed to minimizing the amount of resected bone in order to prevent weakening of the femur (col.1, ll.12-17) and therefore it would have been obvious to simply modify the length of the crown, including a length wherein the circumferential edges of the crown and shell are coplanar in order to minimize bone resection and prevent weakening of the femur.

In addition to the above arguments, because the free edges and the plane referred to in the claims are not specifically defined, the prosthesis of Sutter reads on these claimed features. For example, Claim 18 states that a free edge of the crown lies in the same plane as a free edge of the shell section. Because the plane has not been specifically defined, the plane may include the plane shown below and the claim language in claims 18, 41, and 42 reads on the device of Sutter.

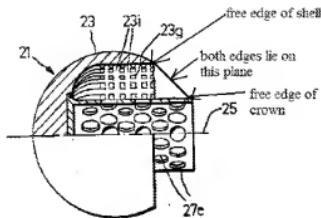


Fig.10

Similarly, claim 36 states that a free edge of the crown does not intersect a plane in which a free edge of the shell section lies. The edges shown below are not intersecting as is required by claim 36.

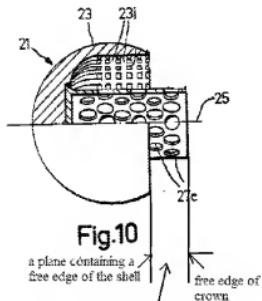


Fig.10

a plane containing a free edge of the shell does not intersect a plane in which a free edge of the shell lies.

free edge of crown does not intersect a plane in which a free edge of the shell lies.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Megan Wolf

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